

Short Communication

Comparison of *Candida Albicans* Adherence to Conventional Acrylic Denture Base Materials and Injection Molding Acrylic Materials

Masoomeh Aslanimehr ¹, Shirin Rezvani ², Ali Mahmoudi ³, Najmeh Moosavi ⁴

¹ Dept. of Microbiology, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, Qazvin, Iran.

² Dental Caries Prevention Research Center, Qazvin University of Medical Sciences, Qazvin, Iran.

³ Dentist, Private Practice, Shiraz, Iran

⁴ Dept. of Prosthodontics, School of Dentistry, Qazvin University of Medical Sciences, Qazvin, Iran.

KEY WORDS

Candida albicans;

Acrylic Resins;

Denture;

ABSTRACT

Statement of the Problem: *Candida* species are believed to play an important role in initiation and progression of denture stomatitis. The type of the denture material also influences the adhesion of candida and development of stomatitis.

Purpose: The aim of this study was comparing the adherence of *candida albicans* to the conventional and injection molding acrylic denture base materials.

Materials and Method: Twenty injection molding and 20 conventional pressure pack acrylic discs (10×10×2 mm) were prepared according to their manufacturer's instructions. Immediately before the study, samples were placed in sterile water for 3 days to remove residual monomers. The samples were then sterilized using an ultra-violet light unit for 10 minutes. 1×10^8 Cfu/ml suspension of *candida albicans* ATCC-10231 was prepared from 48 h cultured organism on sabouraud dextrose agar plates incubated at 37°C. 100 µL of this suspension was placed on the surface of each disk. After being incubated at 37°C for 1 hour, the samples were washed with normal saline to remove non-adherent cells. Attached cells were counted using the colony count method after shaking at 3000 rpm for 20 seconds. Finally, each group was tested for 108 times and the data were statistically analyzed by t-test.

Results: Quantitative analysis revealed that differences in colony count average of *candida albicans* adherence to conventional acrylic materials (8.3×10^3) comparing to injection molding acrylic resins (6×10^3) were statistically significant ($p < 0.001$).

Conclusion: Significant reduction of *candida albicans* adherence to the injection acrylic resin materials makes them valuable for patients with high risk of denture stomatitis.

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Corresponding Author: Rezvani Sh., Dental Caries Prevention Research Center, Qazvin University of Medical Sciences, Bahaonar Blvd., Qazvin, Iran. Tel: +98-912-6457156 Fax: +98-28-33353066 Email: shirin_rezvani@yahoo.com

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Introduction

Denture-induced stomatitis is a common infection in complete or partial denture wearers. Depending on the extent and severity of the infection, it is classified in three types. Type I is a localized simple inflammation or pinpoint hyperemia. While in type II, the erythematous area involves a portion of or the entire surface of the denture covered mucosa. Type III is a combination

of type I and II in addition to a granular inflammatory hyperplasia which usually involves the midline of the hard palate and alveolar ridges. [1]

Among many etiological and predisposing factors, candida species are believed to play an important role in initiation and progression of this infection. [2] The impression surface of a maxillary denture in particular may be a common reservoir for microorgan-